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Appln No. 10/731,385
Amdt date October 11, 2006
Reply to Office action of July 11, 2006

REMARKS/ARGUMENTS

The above identified patent application has been amended and reconsideration and reexamination are hereby requested.

Claims 1 - 20 and 23 - 25 are now in the application. Claims 21 and 22 have been cancelled. Claims 1, 9, 12, 16, 18, 20 and 23 have been amended.

The Examiner has rejected Claims 9, 12, 13 and 15 under 35 U.S.C. §102(e) as being anticipated by Toyota et al. The Examiner has also rejected Claims 16 and 17 under 35 U.S.C. §102(a) as being anticipated by Applicant's admitted prior art.

The Applicant's amended Claim 9 calls for (underlining added for emphasis) ... wherein the illumination assembly includes a phosphor screen formed on a surface of the second substrate, a metal layer formed on the phosphor screen within the vacuum assembly, and an anode input terminal formed extending from within the vacuum assembly to outside of the sealant, in which an end of the anode input terminal within the vacuum assembly contacts the metal layer to be electrically connected to the metal layer and an anode voltage is applicable to a portion of the anode input terminal extending beyond the sealant.

As such, the Applicant submits that Claim 9 is not anticipated by Toyota et al. under 35 U.S.C. §102(e).

While Toyota et al., may teach an anode electrode 33 schematically connected to an anode-electrode control circuit 42, the connection (terminal) appears within the vacuum assembly. As such, the Applicant submits that Toyota et al. does not describe, teach or suggest an anode input terminal formed extending from within the vacuum assembly to outside of the sealant, in which an end of the anode input terminal within the vacuum assembly contacts the metal layer to be electrically connected to the metal layer and an anode voltage is applicable to a portion of the anode input terminal extending beyond the sealant.

Accordingly, the Applicant submits that Claim 9 is not anticipated by Toyota et al. under 35 U.S.C. §102(e).

Appln No. 10/731,385

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The Applicant's amended Claim 16 calls for (underlining added for emphasis) ... a metal layer positioned on the phosphor layer, wherein the metal layer is formed entirely within the vacuum envelope; and an anode input terminal extends from within the vacuum envelope to outside the sidewalls.

As such, the Applicant submits that Claim 16 is not anticipated by Toyota et al. under 35 U.S.C. §102(e) for the same reasons set forth above with regard to Claim 9.

The Applicant's admitted prior art, while providing for a metal layer extending from within the vacuum assembly to outside the sealant where an anode voltage is applied, does not show the metal layer being formed entirely within the vacuum envelope

Accordingly, the Applicant submits that Claim 16 is not anticipated by the Applicant's admitted prior art under 35 U.S.C. §102(a).

The Examiner has further rejected Claims 1 - 6, 8 and 16 -25 under 35 U.S.C. §103(a) as being unpatentable over Jaskie et al. in view of Bojkov et al. The Examiner has also rejected under 35 U.S.C. §103(a): Claim 1 as being unpatentable over Jaskie et al. and further in view of Applicant's admitted prior art, Claim 10 as being unpatentable over Toyota et al. in view of Jaskie et al., Claim 11 as being unpatentable over Toyota et al., and Claim 14 as being unpatentable over Toyota et al and further in view of Peng.

The Applicant's amended Claim 1 calls for (underlining added for emphasis) ... wherein the illumination assembly includes (a) a transparent conductive layer formed on a surface of the second substrate, the transparent conductive layer having a portion extending beyond the sealant as an anode input terminal to which an anode voltage is applied, ...

As set forth above, the Applicant's amended Claim 16 calls for (underlining added for emphasis) ... a metal layer positioned on the phosphor layer, wherein the metal layer is formed entirely within the vacuum envelope; and an anode input terminal extends from within the vacuum envelope to outside the sidewalls.

Applicant's amended Claim 23 calls for (underlining added for emphasis) ... An illumination assembly for a field emission display realizing a display of images by electrons emitted from an electron emission assembly within a vacuum assembly between substrates

Appln No. 10/731,385
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sealed by a sealant, comprising: ... a transparent conductive layer formed on a surface of the substrate, the transparent conductive layer having a portion extending beyond the sealant and having an anode input terminal as a portion of the transparent conductive layer extending beyond the sealant to which an anode voltage is applied; ...

Accordingly, the Applicant submits that the invention as claimed in Claims 1, 16 and 23 are neither taught, described or suggested in Jaskie et al., even in view of Bojkov et al., or in view of the Applicant's admitted prior art.

Jaskie et al., while providing for a transparent conductive layer anode 124, merely shows schematically an independently controlled voltage source 118 connected to anode 124.

Bojkov et al., while providing for a field emission device having pillars 601 separating substrates 100 and 602, does not show any layers or terminal extending beyond the pillars.

The Applicant's admitted prior art, while providing for a terminal beyond the sealant, does not show a transparent conductive layer extending beyond the sealant or any connections made to the a metal layer within the vacuum envelope.

As noted by the Applicant in the Specification, problems with the prior art can arise as to the particular layerings, sealant and terminal location relationships:

However, there are problems associated with metal layer 5, and in particular, with metal layer 5 made of aluminum. That is, although an adhesive strength of metal layer 5 is exceptional immediately following a layer forming process such as sputtering, if thermal deformation occurs as a result of a baking process following sputtering, the adhesivity of metal layer 5 is significantly reduced. Accordingly, metal layer 5 having undergone a baking process is easily separated from faceplate 1 such that it is unable to perform its function. This makes metal layer 5 unsuitable for use as a terminal that receives the anode voltage.

Further, the strength of metal layer 5 is reduced for the above reasons such that metal layer 5 is damaged in the vicinity of sealant 7. This reduces the degree of vacuum in the FED, negatively affecting the overall operation of the display.

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And, as also noted in the Specification, the problems with the prior art can be addressed by the embodiments of the present invention:

In the FED of the present invention structured and operating as described above, layers functioning as the anode input terminal do not become damaged in the vicinity of the sealant. As a result, a high vacuum state of the FED may be maintained. Also, the adhesivity of the metal layer with respect to the phosphor screen is improved such that the high anode voltage may be stably maintained, and damage to the metal layer and removal of the phosphor screen are effectively prevented.

Accordingly, the Applicant submits that there is no suggestion to combine the references as indicated by the Examiner and result in the presently amended claims. Therefore, Claims 1, 16 and 23 should not be deemed unpatentable over Jaskie et al. even in view of Bojkov et al, or the Applicant's admitted prior art.

Claims 2 - 8 are dependent on Claim 1. Claims 10 - 15 are dependent on Claim 9. Claims 17 - 20 are dependent on Claim 16. Claims 24 and 25 are dependent on Claim 23. As such, these claims are believed allowable based upon Claims 1, 9, 16 and 23.

Therefore, in view of the above amendment and remarks it is submitted that the claims are patentably distinct over the prior art and that all the rejections to the claims have been overcome. As such, allowance of the above Application is requested.

Respectfully submitted,
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